

作成承認印	配布許可印
	

**F70**

**FAA30051**

**FAA30351**

**N70**

**FAA30151**

**REPAIR MANUAL**

**Nikon** | **NIKON CORPORATION**  
 Tokyo, Japan

Product: Nikon F70,N70 Digital Camera Service Repair Workshop Manual  
Full Download: <https://www.arepairmanual.com/downloads/nikon-f70n70-digital-camera-service-repair-workshop-manual/>

## Specifications

**Note:** Information described in the Instruction Manual and brochures is not included in this paper.

### 1. Metering system

Same metering system as in F90/N90

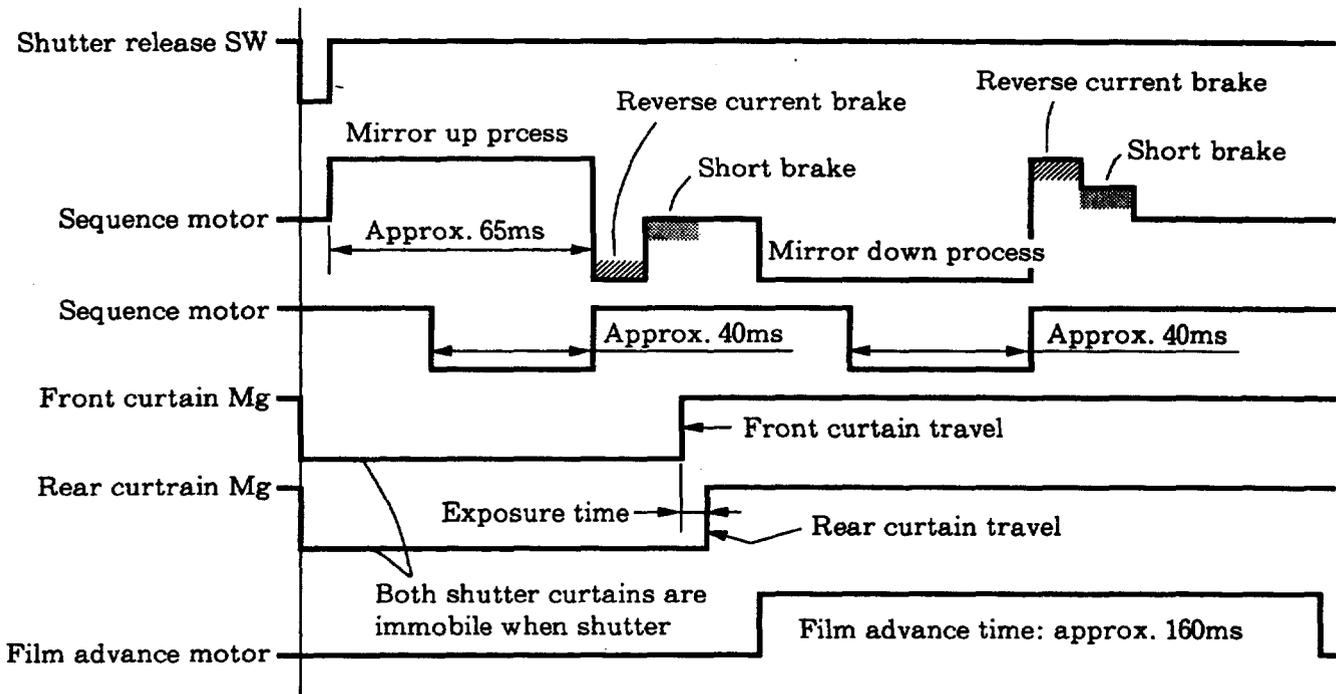
### 2. Film speed setting

- (1) Film speed is preset to DX mode. If non DX-coded film is loaded, an alarm indicator appears and the shutter release locks up after advancing blank exposures.
- (2) If film speed setting has been set to manual when a DX-coded film is loaded, the camera is controlled by a manually set ISO film speed.

### 3. AE lock

- (1) Exposure data measured at the time when the AE lock button is pressed can be memorized and exposure is controlled based on that value.
- (2) Exposure value memorized in either P, Ps, S, or A mode is BV value. The exposure indicator in M mode shows the state of BV locked.
- (3) When the AE lock button is pressed, the exposure indicator remains fixed at the memorized data. However, if you rotate the aperture ring in A mode while AE is locked, change the shutter speed to obtain a correct exposure.  
When the aperture value reaches its maximum or minimum limit in P or S mode, or when the program chart changes due to lens focal length variation or maximum f-number, change the indicator and the control.
- (4) AE lock remains active as long as the prerelease timer is ON. Shutter prerelease timer cannot turn OFF while AE is locked. The timer turns OFF within approx. 8 seconds after removing one's finger from the AE lock button.
- (5) If a shutter speed has changed to an X sync speed due to the use of a Speedlight while AE is locked, the camera is controlled by the aperture value (obtained from the changed shutter speed) and the locked BV value.
- (6) As AE is locked when the self-timer is activated, no exposure value changes even if the AE lock button is pressed.

4. Sequence control



- (1) When receiving a shutter release signal, the sequence motor starts rotating in normal direction to move the mirror up.
  - Main mirror moves up (to get out of the way of the image optical path.)
  - Aperture lever moves down (to control aperture.)
  - Shutter mechanism hold is released.
- (2) In synchronizing with a shutter release signal, an electric current is transferred to the front and rear shutter curtain Mg's and hold both curtains.
- (3) The front shutter curtain Mg turns OFF after a certain period of time, thus allowing the front shutter curtain to move.
- (4) The rear shutter curtain moves to obtain exposure time by turning OFF the rear shutter curtain Mg in a specified period of time after turning OFF the front curtain Mg.
- (5) The camera goes into a mirror-down process by rotating the sequence motor in reverse direction within a specified period of time after running the rear shutter curtain.
  - Main mirror move down (to the 45° position.)
  - Aperture lever returns (to maximum aperture position)
  - Shutter charging is completed.
- (6) The camera advances film by rotating the film advance motor within a specified period of time after running the rear shutter curtain.

## 5. Sequence errors

### (1) Time out during mirror-up operation

If mirror-up and aperture control operations are not completed within a specified period of time (or duration time between starting rotating the sequence motor and turning OFF the sequence switch exceeds 110ms), the following warning indicators will appear and shutter release will be locked.

#### 《Warning indicators》

- "Err" indicator blinks and aperture indicator goes out (inside viewfinder and LCD panel.)
- Battery check indicator blinks.
- Other indicators are properly displayed.

#### 《Recovery operation》

Turn the power switch OFF once and turn it ON again to recover the shutter release operation.

### (2) Time out during mirror-down operation

With the mirror down, aperture control and shutter charging operations cannot be completed within a specified period of time (duration time between start of sequence motor rotation and turning OFF the sequence switch exceeds 100ms), the following warning indicators will appear and shutter release will be locked.

#### 《Warning indicators》

- "Err" indicator blinks and aperture indicator goes out (inside viewfinder and LCD panel.)
- Battery check indicator blinks.
- Other indicators are properly displayed.

#### 《Recovery operation》

Turn the shutter prerelease switch ON after turning OFF the shutter prerelease timer to recover the shutter release operation.

### (3) Time out during front shutter curtain operation

Front shutter curtain travel is not completed within a specified period of time (X contact turns OFF in 8msec after the rear curtain Mg turns OFF), the following warning indicators appear and shutter release is locked.

#### 《Warning indicators》

- "Err" indicator blinks and aperture indicator goes out (inside viewfinder and LCD panel.)
- Battery check indicator blinks.
- Other indicators are properly displayed.

#### 《Recovery operation》

Turn the shutter prerelease switch ON after turning OFF the shutter prerelease timer to recover the shutter release operation.

(4) Time out-1 during aperture control

The following warning indicators appear and shutter release will lock if no pulse signal is generated while moving the mirror up.

《Warning indicators》

- “Err” indicator blinks and aperture indicator goes out (inside viewfinder and LCD panel.)
- Other indicators are properly displayed.

《Recovery operation》

- Turn the power switch OFF once and turn it ON again to recover the shutter release operation.
- Set the exposure mode to A or M to recover the shutter release operation.

(5) Time out-2 during aperture control

The following warning indicators appear and shutter release will lock (in P or S mode) if more than six overrun pulse signals are generated after an electric current is transferred to the aperture Mg.

《Warning indicators》

- “Err” indicator blinks and aperture indicator goes out (inside viewfinder and LCD panel.)
- Other indicators are properly displayed.

《Recovery operation》

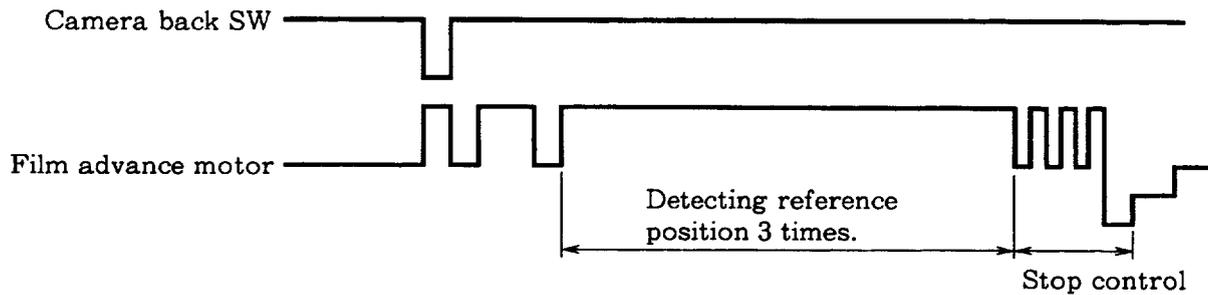
- Turn the power switch OFF once and turn it ON again to recover the shutter release operation.
- Set the exposure mode to A or M to recover the shutter release operation.

(6) Recovery operation if CPU voltage is reset below the threshold voltage (including the case where batteries are removed during operation).

Sequence SW	OFF	ON	OFF	ON
X contact SW	OFF	OFF	ON	ON
State of malfunction	Normal	Abnormal	Abnormal	Abnormal
	Waiting normal shutter release.	Stops abnormally during mirror-up and mirror-down operations.	Waiting mirror-down signal. ● Battery power exhausts in Blub mode. ● Front shutter curtain malfunction.	Stops abnormally during mirror-down operation.
Warning indicators	Normal display	“Err” indicator blinks. Aperture indicator goes out. “□” indicator blinks.	“Err” indicator blinks. Aperture indicator goes out.	“Err” indicator blinks. Aperture indicator goes out. “□” indicator blinks.
Recovery operation	Normal operation	Fully press the shutter release button to rotate the sequence motor reversely, and turn off the sequence SW to stop. Then advance film by one frame.		

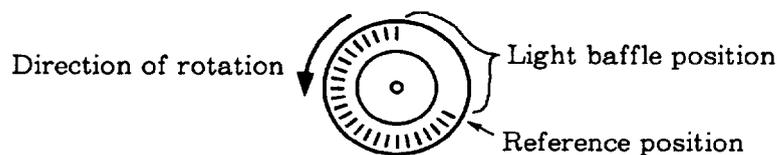
*\*Even though the sequence SW does not turn OFF, the sequence motor stops in a specified period of time.*

## 6. Film blank exposures



The film advance motor stops when the reference position\* is detected three times and when 43 pulse signals are generated from the last reference position detection.

\*Reference position: The position where the first pulse signal is generated after passing the light baffle portion of the encoder blades.



- Blank exposures are 2.5 to 3.5 frames.

## 7. Controlling film advance operation

### (1) Amount of film feed per stroke

- Inter-frame distance: within  $2\text{mm} \pm 1\text{mm}$  (no double frames)
- Amount of film feed per stroke: within  $38\text{mm} \pm 0.8\text{mm}$ .

### (2) Film stop control

The film advance motor is programmed to stop when it receives 44 pulse signals from the reference position.

In order to maintain the accuracy of the film stop position against a variation of film advance speed due to power voltage fluctuation, the stop function is controlled by monitoring the film advance speed.

## 8. Rewinding film

- (1) In silent mode, the film rewind speed is reduced by 60% to minimize noise.
- (2) At the end of film rewind operation, the film tongue is rewound up into the film cartridge.

**9. Film advance speed**

● AF lens mounted:

(In manual exposure mode (M) at shutter speed of 1/250 sec. or higher, using fresh batteries, at normal temperature. Unit: frame/sec.)

Focus mode	Film advance mode	AF driving inside body	AF driving inside lens	AF lock**
AF-C	CH	3.1 (max.)*	3.1 (max.)*	3.7
	CL	2	2	2
AF-S	CH	3.1 (max.)*	3.1 (max.)*	3.7
	CL	2 (max.)	2 (max.)	2
M	CH	3.7***	3.7***	3.7
	CL	2	2	2

● Non-AF lens mounted:

Focus mode	Film advance mode	Film advance speed
AF-C	CH	3.1
	CL	2
AF-S	CH	3.1
	CL	2
M	CH	3.7***
	CL	2

\* Optimum subject for still picture and focus tracking

\*\* AF locks when shutter is pressed halfway in AF-S mode on the body, or when focus lock button on lens is pressed.

\*\*\* No in-focus indicator appears starting from the second frame and no exposure metering refresh is performed. Metering and exposure indicator displays are fixed.

**10. Shutter**

The shutter unit is made up of nine blades including four aluminum blades for the front shutter curtain and two aluminum and three plastic blades for the rear shutter curtain. A coating (18% reflection factor) has been applied on the front shutter curtain (lens side).

## 11. AE bracketing

- (1) Exposure level is determined by metering the exposure value for each frame and adjusting exposure compensation value equivalent to the correction steps specified for the reference value.
- (2) When AE bracketing is set up, shooting is enabled by adjustment of exposure level from underexposure to overexposure.
- (3) When AE bracketing is set up, and if shooting takes place while holding down the AE lock button, the exposure level is determined by adjusting the specified exposure compensation value for each frame based on the exposure value at the time when AE is locked.  
When the AE lock is released, the exposure compensation level is determined based on the reference value measured at the time when the AE lock is released.
- (4) If adjusted exposure level is out of exposure metering range, exposure is controlled at the limit of the metering range.

## 12. SB bracketing

- (1) TTL flash output level is determined by metering the exposure value for each frame and setting an exposure compensation value equivalent to the correction steps specified for the reference value.
- (2) When SB bracketing is set up, shooting is enabled by continuous adjustment of flash output level from underexposure to overexposure.
- (3) When SB bracketing is set up, and if shooting is made while holding down the AE lock button, the exposure level is determined by adjusting the specified flash output compensation value for each frame, based on the locked BV value for the background at the time when the AE is locked.  
When the AE lock is released, the exposure compensation level is determined based on the reference value measured at the time when the AE lock is released.
- (4) If the adjusted exposure level is out of exposure metering range, exposure is controlled at the limit of the metering range. If flash output is insufficient, a full flash output warning indicator appears.

## 13. Self-timer photography

- (1) When using the self-timer, the exposure metering value should be memorized as a BV value at the time when the self-timer is activated.
- (2) If the shutter speed dial is set to B (bulb) in manual (M) exposure mode, the camera is controlled as described below.
  - If shutter release button is not pressed, shutter is released at shutter speed of approx. 1/30 sec.
  - If shutter release button is pressed, the camera is controlled in B (bulb) mode.

**14. 2-pin terminal**

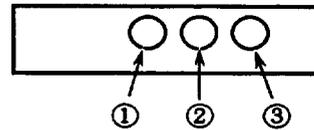
The following two contacts are provided.

- ① Shutter pre-release/shutter release signal contact
- ② GND contact

**15. Data back contacts**

The following three contacts are provided.

- ① Data imprinting signal contact
- ② Panorama switching signal contact
- ③ GND contact



**16. Electric current consumption**

[Fresh batteries are used at normal temperature (with 5.5V + 0.5Ω using DC regulated power supply)]

Main switch is OFF.	Less than 50 μ A
Main switch is ON and shutter prerelease timer is OFF.	Less than 200 μ A
Metering and focusing are made while shutter prerelease timer is ON. (AF lens not activated)	Less than 250mA
Metering and focusing are made while shutter prerelease switch is ON and driving AF Nikkor 35-70mm f/3.3-4.5).	Less than 600mA (at rated state)
While the camera is advancing the 18th frame (mirror stays up.)	Less than 700mA (at rated state)
Film is being rewound.	Less than 600mA (at rated state)

E l e c t r i c C i r c u i t

Wiring Diagram ----- E 1

Circuit Diagram ----- E 2

PART & CHECKLANDS

TOP COVER FPC (ORIGINAL) ----- E 3

TOP COVER FPC (REVISED) ----- E 5

PENTAPRISM BOX FPC ----- E 7

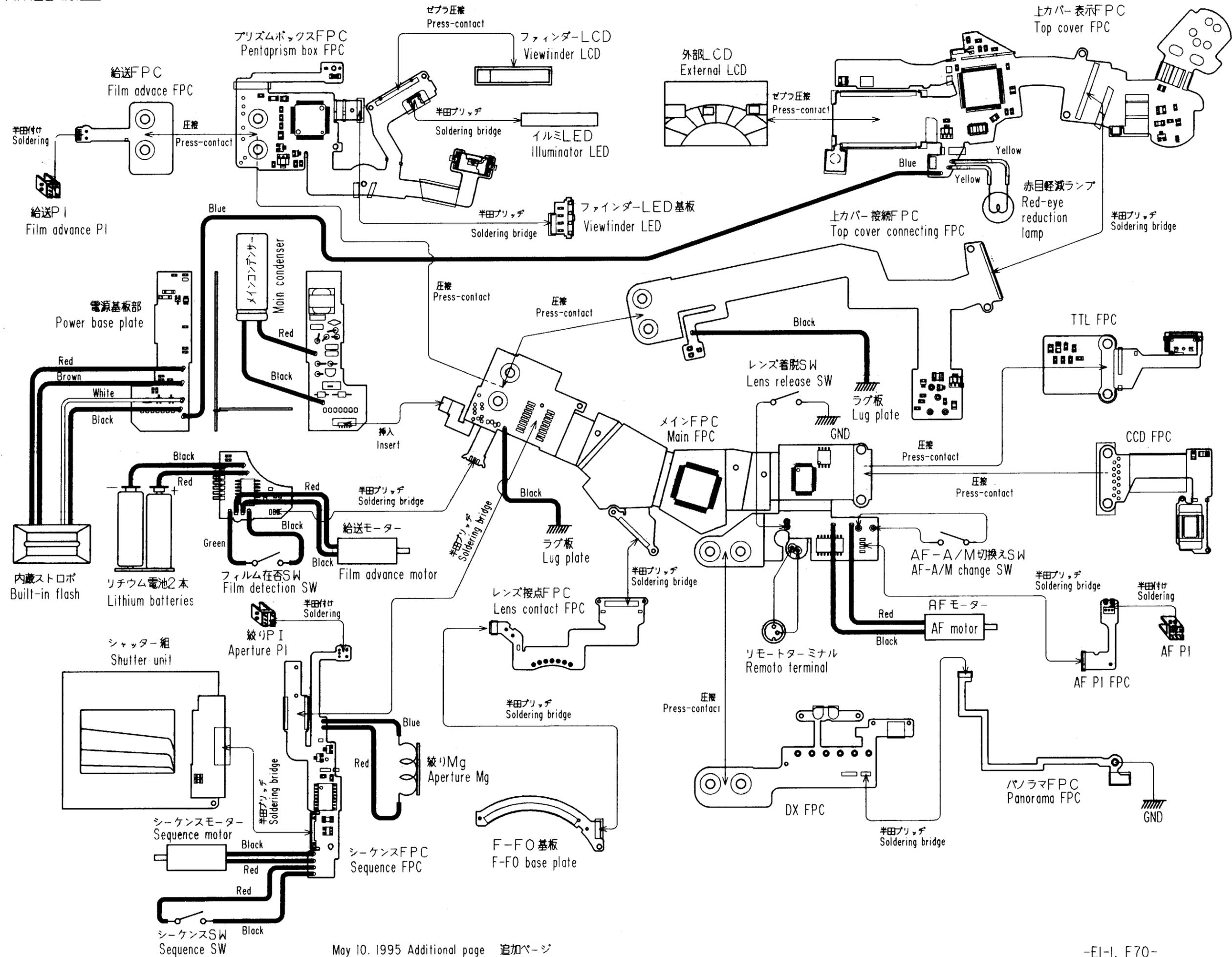
MAIN FPC ----- E 10

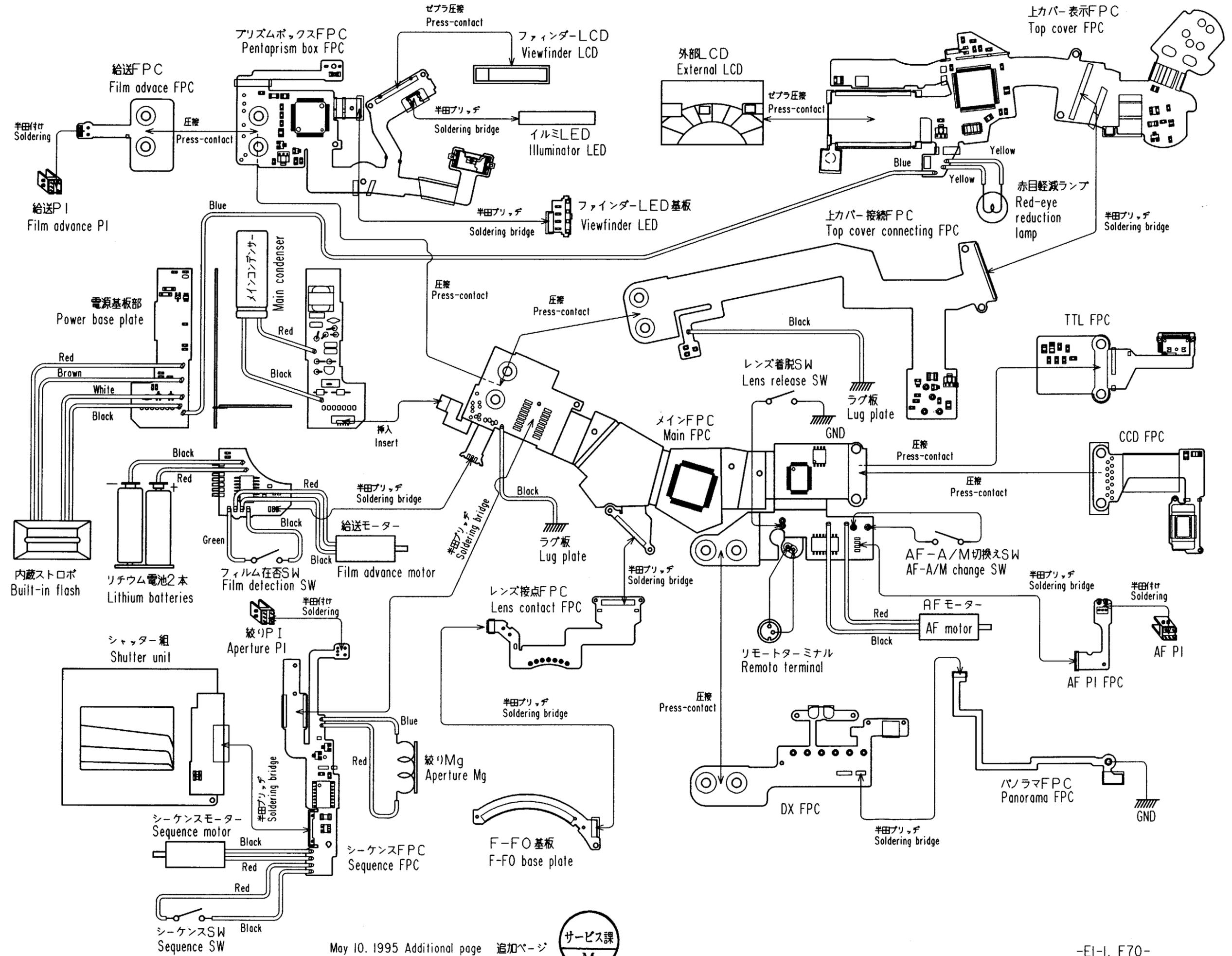
TTL FPC ----- E 12

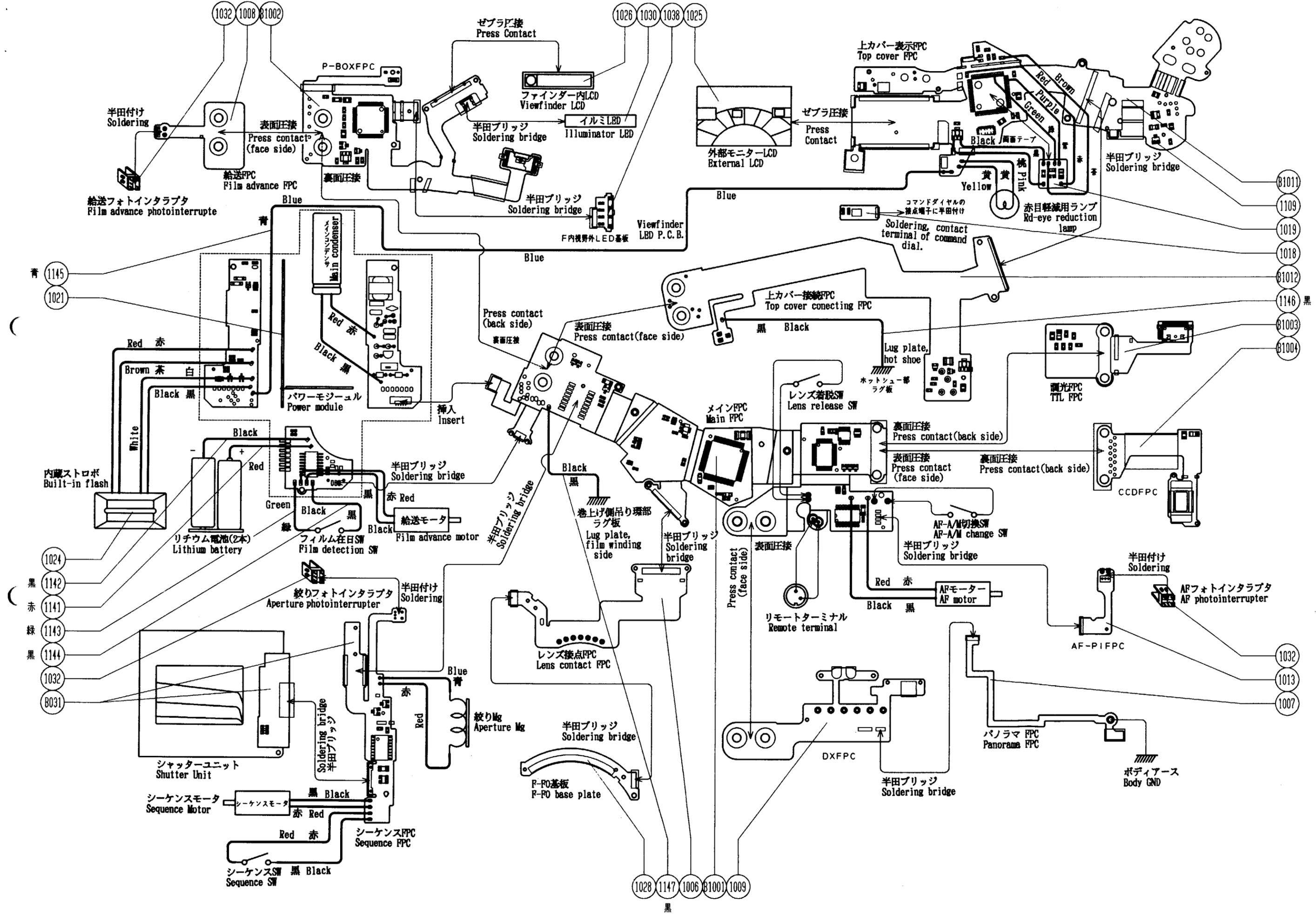
CCD FPC ----- E 13

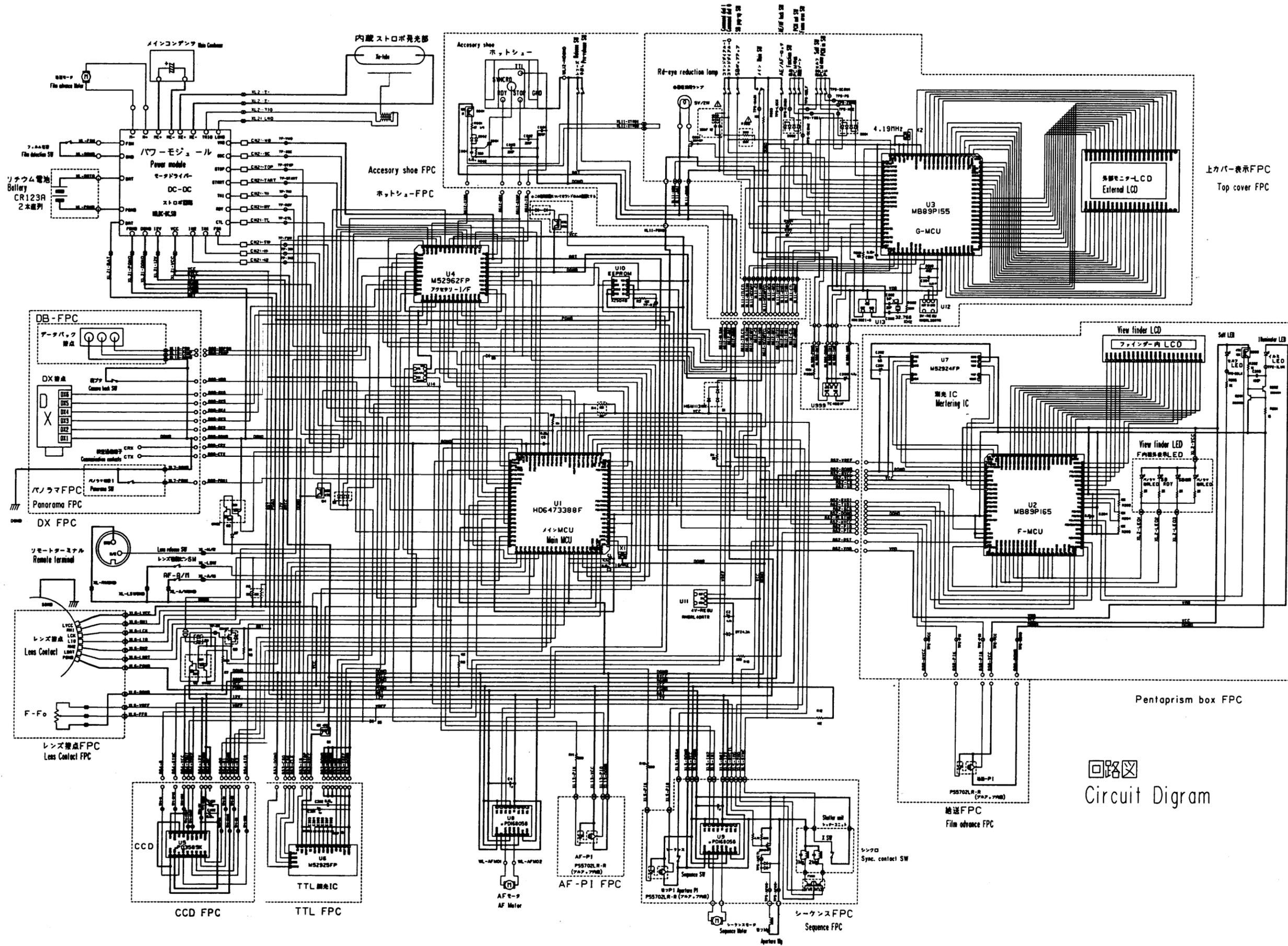
PIN TABLE ----- E 14

# 実体配線図 WIRING DIAGRAM









回路図  
Circuit Diagram

Top cover FPC

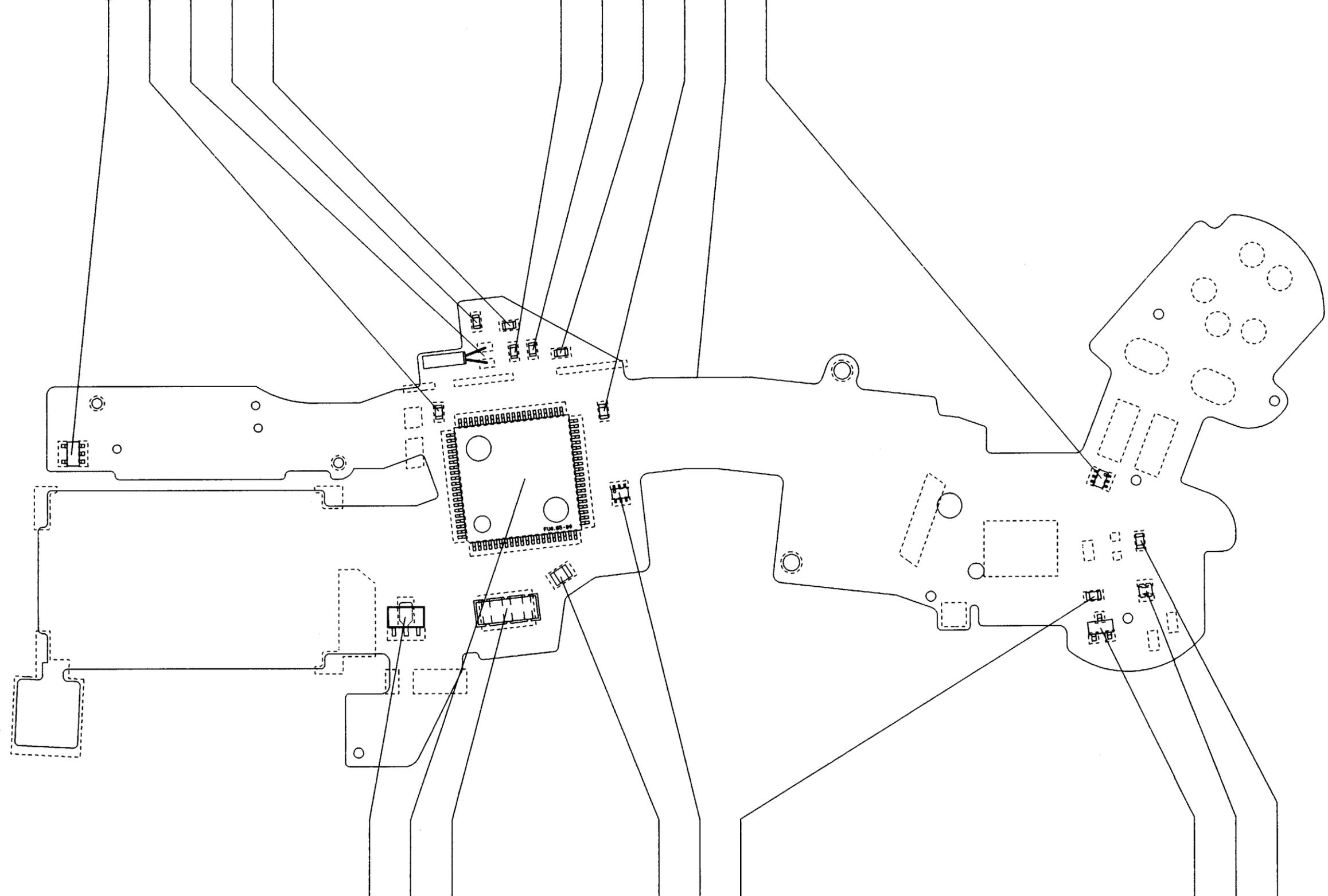
量産初期品  
ORIGINAL

U12 R903 X3 C903 R902  
RN5RL30A 10K 32K 22p 330K

R910 C904 C902 R911 FPC D902  
470K 0.01u 51p 10K UMP11

(1053) (1128) (1037) (1114) (1133)

(1134) (1109) (1115) (1128) (1011) (1090)



(1064) (1043) (1036)

25K1467 4.194M  
Q901 U3 X2

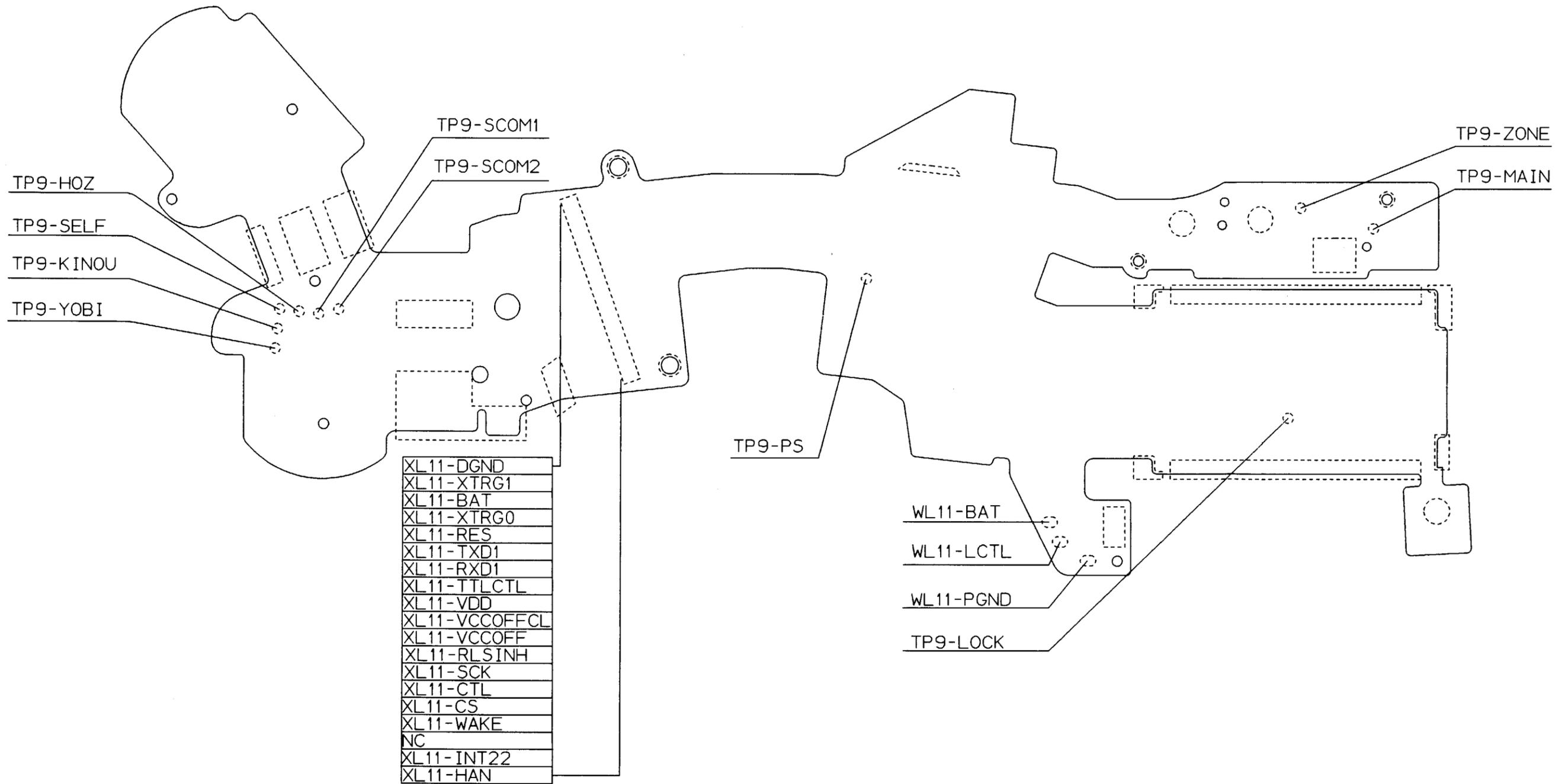
(1107) (1090) (1128)

0.15u UMP11 10K  
C901 D901 R901

(1054) (1137) (1128)

MN13821 330k 10k  
U13 R905 R904

量産初期品  
ORIGINAL



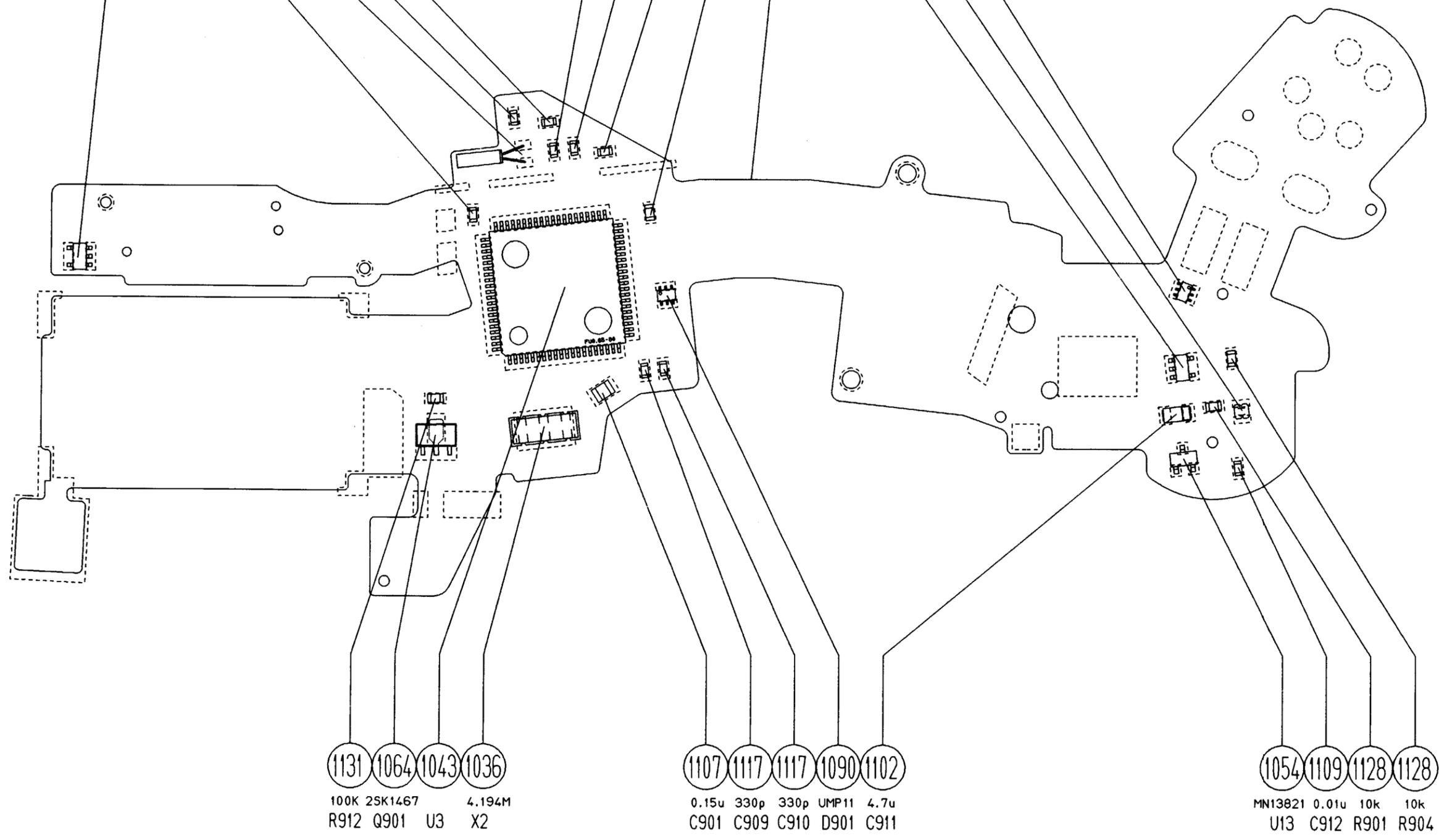
訂品  
REVISED

U12 R903 X3 C903 R902  
RN5RL30A 10K 32K 22p 330K

1053 1128 1037 1114 1133

R910 C904 C902 R911 FPC U15 R905 D902  
470K 0.01u 51p 10K TC7508F 330k UMP11

1134 1109 1115 1128 1011 1128 1137 1090



1131 1064 1043 1036

100K 25K1467 4.194M  
R912 Q901 U3 X2

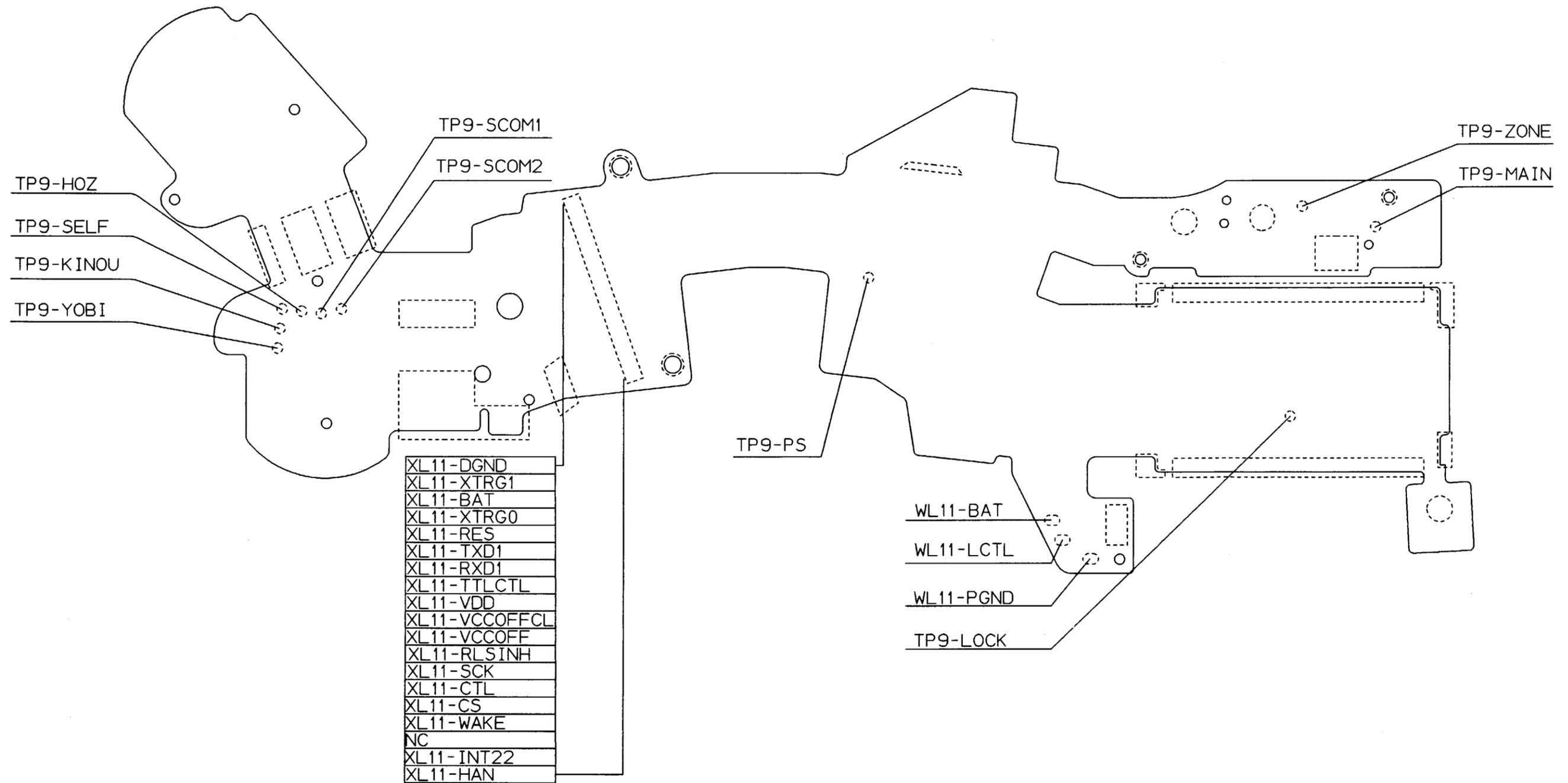
1107 1117 1117 1090 1102

0.15u 330p 330p UMP11 4.7u  
C901 C909 C910 D901 C911

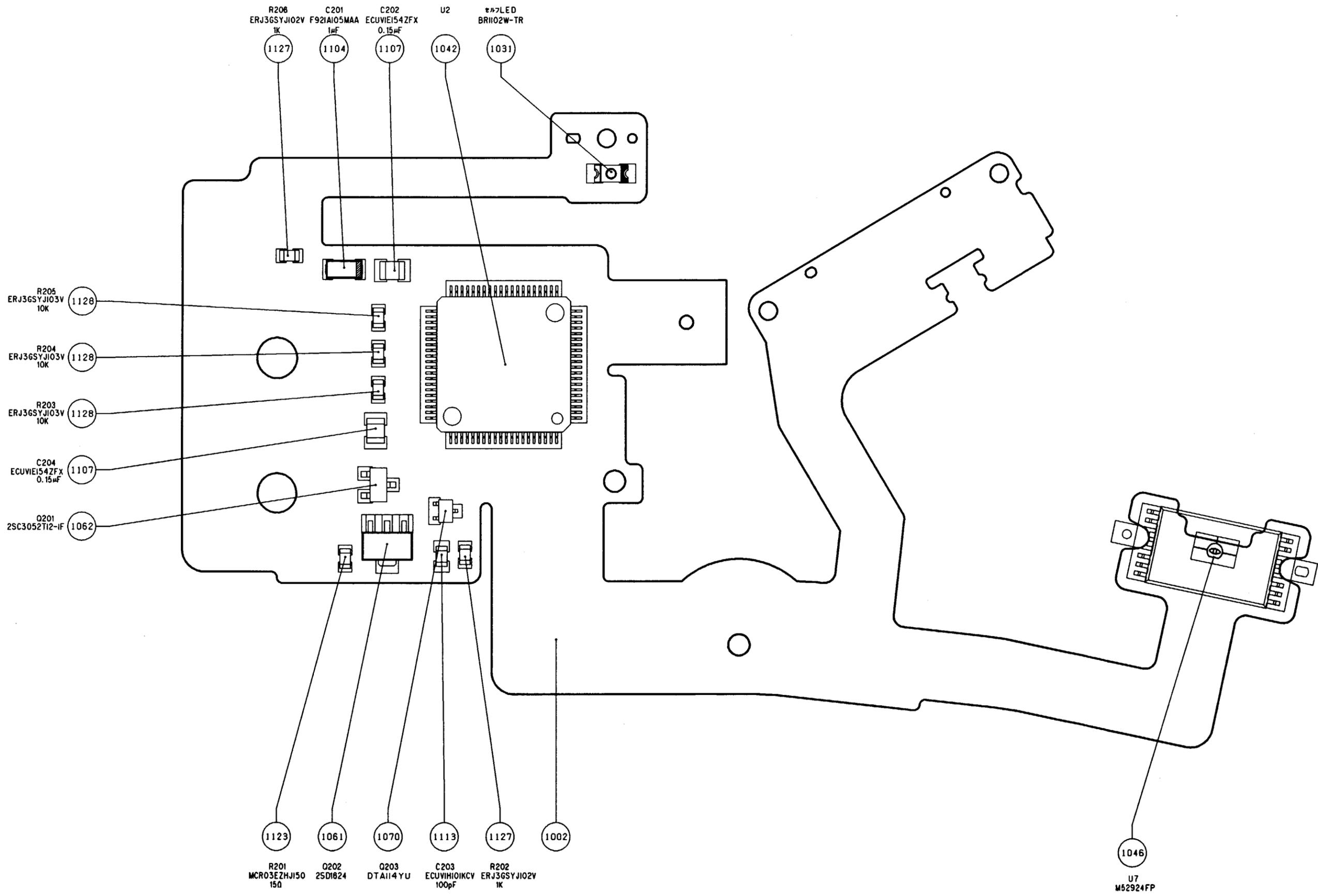
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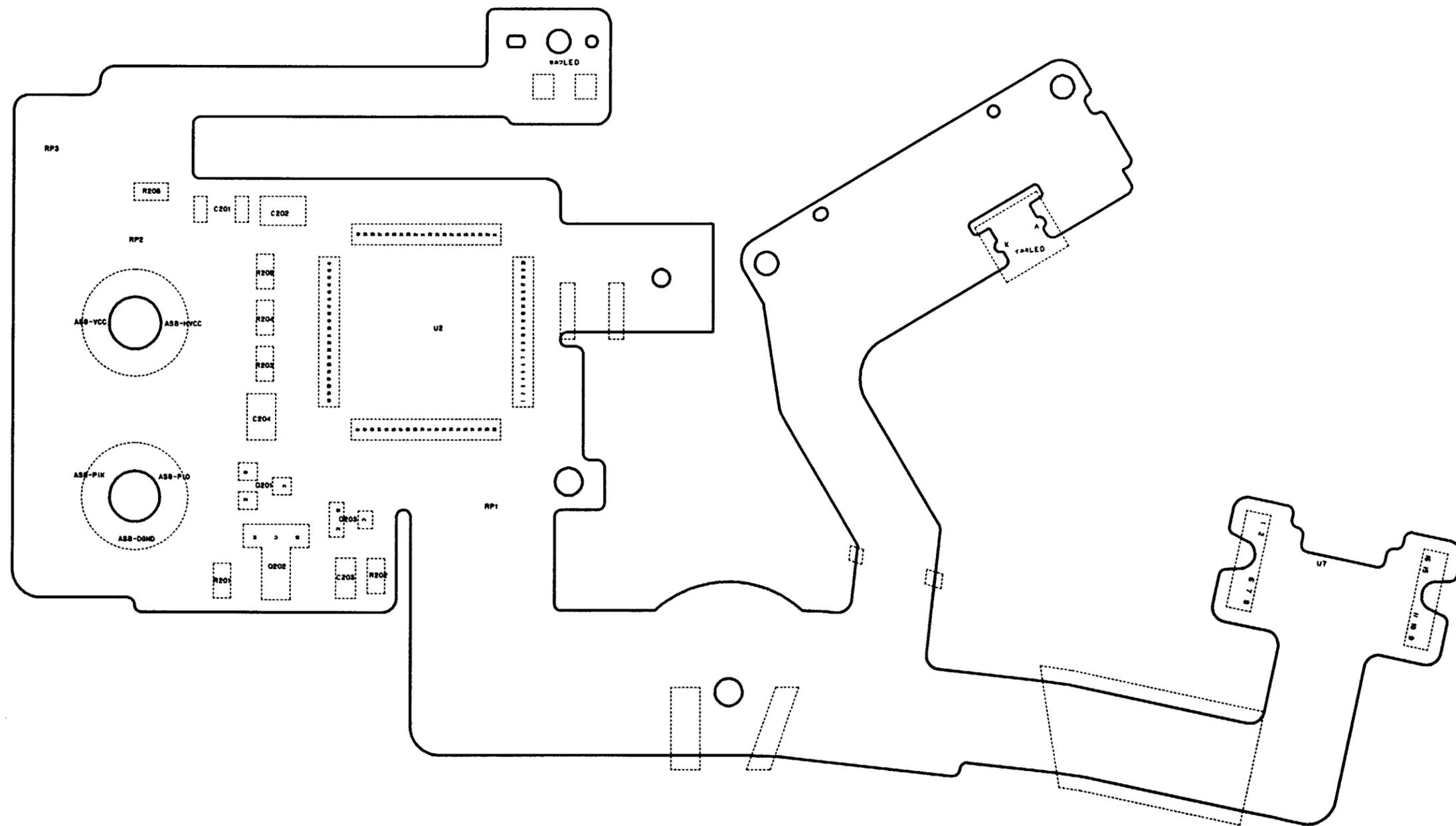
MN13821 0.01u 10k 10k  
U13 C912 R901 R904

訂品  
REVISED



ペンタプリズムボックスFPC  
Pentaprism box FPC









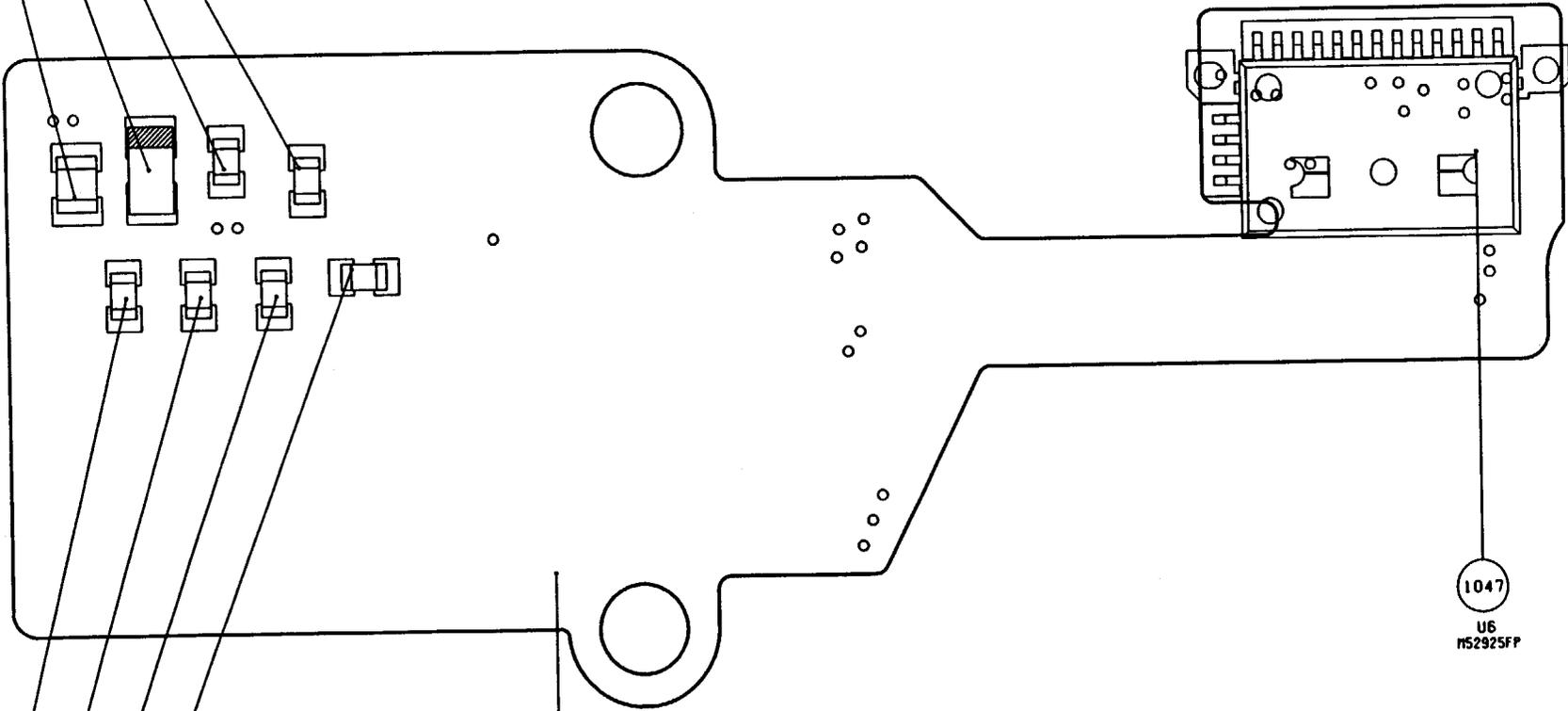


TTL FPC

FAA30051 - R. 3364. A

0.15U 1U 1000P 560P  
C302 C301 C303 C304

1107 1104 1110 1111



1047

U6  
MS2925FP

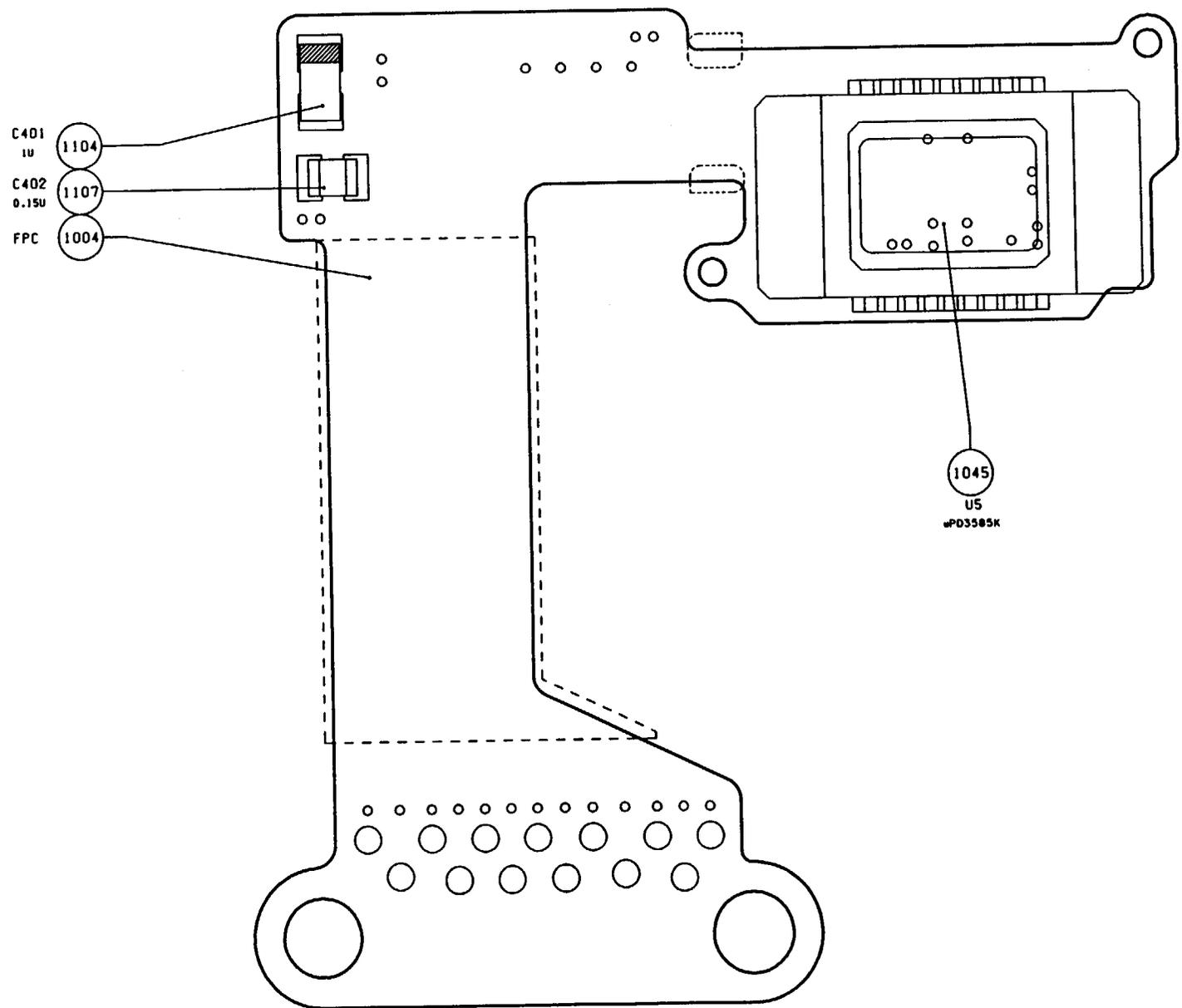
1009

FPC

1111 1111 1111 1111

C308 C307 C306 C305  
560P 560P 560P 560P

CCD FPC



Main MCU Pin-table			
NO	Terminal	NO	Terminal
1	RES Reset	41	P42 Apperture Mg drive signal
2	XTAL Oscilater	42	P43 Chip select (EEPROM)
3	EXTAL Oscilater	43	P44 S Q motor drive signal 2
4	MD1 V c c	44	P45 Film motor drive signal 2
5	MDO V c c	45	P46 A F motor drive signal 1
6	NM1 CCD output A/D sync. signal	46	P47 Film motor drive signal 1
7	STBY V c c	47	Vcc V c c
8	Vcc V c c	48	P27 Pre-release switch
9	P52 SerialCLK(F-,G-MCU, EEPROM)	49	P26 Film detection switch
10	P51 Serial Data output	50	P25 LED(Film PI) drive signal
11	P50 Serial Data input	51	P24 LED(App. PI) drive signal
12	Vss D G N D	52	P23 Panorama changed switch
13	P97 Release sequence signal	53	P22 Release switch
14	P96 Oscilater input (F-MCU)	54	P21 Reset signal for F-MCU
15	P95 Serial Chip select (F-MCU)	55	P20 Vcc OFF in signal
16	P94 Serial Chip select (G-MCU)	56	Vss D G N D
17	P93 Vcc OFF out signal (G-MCU)	57	P17 Back door switch
18	P92 Syncro switch	58	P16 A F A/M changed switch
19	P91 Inspection Rx buffer (I/F)	59	P15 A F motor drive direction
20	P90 CCD output A/D sync. signal	60	P14 A F motor drive signal 2
21	P60 1st Mg Drive signal	61	P13 Chip select 1(ch select)
22	P61 2nd Mg Drive signal	62	P12 Chip select 2(ch select)
23	P62 Apperture pulse input	63	P11 Ch select clock
24	P63 Film advance pulse input	64	P10 T T L - I C power suply
25	P64 TTL-stop signal	65	P30 Lens release pin switch
26	P65 Sequence switch	66	P31 Switch control signal
27	P66 TTL-stop (Internal SB)	67	P32 Latch code D $\phi$
28	P67 Lens contact R/W1	68	P33 Latch code D 1
29	AVcc 4 V input	69	P34 Latch code D 2
30	P70 C C D output monitor signal	70	P35 Latch code D 3
31	P71 f - f $\phi$	71	P36 N C
32	P72 Temperature detection(SB)	72	P37 Latch strobe signal
33	P73 Voltage of Main-con. detect	73	Vss D G N D
34	P74 N C	74	P80 Latch code CS
35	P75 A/D voltage (I/F)	75	P81 Latch code CLK
36	P76 SB charge control voltage	76	P82 Latch code SI
37	P77 T T L gain set voltage	77	P83 Latch code SO
38	AVss A G N D	78	P84 Serial Tx buffer
39	P40 A F pulse input	79	P85 Serial Rx buffer
40	P41 S Q motor drive signal 1	80	P86 Lens serial CLK

Accessary I/F Pin-table			
NO	Terminal	NO	Terminal
1	TTL SB TTL signal	25	DX5 DX 5 contact
2	OSTH SBcharge control Voltage	26	DX6 DX 6 contact
3	OSC SBcharge control Signal	27	ICLK Clock input
4	AD1 A/D Voltage input 1	28	OCLK Clock output for CCD
5	AD2 A/D Voltage input 2	29	LCK Serial clock input
6	ADO A/D Voltage output	30	LSI Serial code input
7	Vcc V c c	31	LCS Chip select input
8	RLS Release signal output	32	RESI Reset input for latch
9	HAN Pre-release signal output	33	AFD1 AFmotor forward drive output
10	RM Remote signal input	34	AFD2 AFmotro reverse drive output
11	RES0 Power on reset signal	35	AFMD AFmotor drive derection input
12	GLC0 X-contact OUTPUT(Hot shoe)	36	AFM1 AFmotor drive signal 1 input
13	GLC1 Start signal(internal SB)	37	AFM2 AFmotor drive signal 2 input
14	GLC2 Battery check drive signal	38	RXD1 Serial data input
15	GLC3 AF-PI drive signal	39	TXD2 Inspection signal output
16	GLC4 Data print signal	40	CRX Inspection ignal in-output
17	DB01 lens contact D	41	TXD1 Serial data output
18	RXD2 Inspection CTX	42	WAKE Power wake-up signal
19	GND D G N D	43	STOP TTL-STOP signal
20	DB02 D B contact for data	44	GND D G N D
21	LSO Serial status	45	SCK Serial clock input
22	DX2 D X 2 contact	46	RDY Ready terminal(Hot Shoe)
23	DX3 D X 3 contact	47	BAT Battery voltage input
24	DX4 D X 4 contact	48	IS Integrated start signal

F70 (N70) EEPROM DATA

95-03-10

ADRS	CONTENTS	M-CPU			NOTE
		MP 1	MP 2	MP 3	
		3.39	3.44	4.03	
0	AD ADJUSTMENT DATA	-	-	-	
1	1	1	1	1	
183	AF ADJUSTMENT DATA	-	-	-	
184	AE ADJUSTMENT DATA	7	7	7	
185	AE ADJUSTMENT DATA	164	164	164	
186	AE ADJUSTMENT DATA	34	34	34	
187	AE ADJUSTMENT DATA	0	0	0	
188	AE ADJUSTMENT DATA	205	205	205	
189	AE ADJUSTMENT DATA	126	126	126	
190	AE ADJUSTMENT DATA	2	2	2	
191	AE ADJUSTMENT DATA	1	1	1	
192	AE ADJUSTMENT DATA	-	-	-	
1	1	1	1	1	
219	AE ADJUSTMENT DATA	-	-	-	
220	AF CONTROL DATA	192	192	192	
221	AF CONTROL DATA	1	1	1	
222	AF CONTROL DATA	104	104	104	
223	AF CONTROL DATA	20	20	20	
224	AF CONTROL DATA	10	10	10	
225	AF CONTROL DATA	-	-	-	
226	AF CONTROL DATA	197	197	197	
227	AF CONTROL DATA	127	127	127	
228	AF CONTROL DATA	164	164	164	
229	AF CONTROL DATA	126	126	126	
230	AF CONTROL DATA	128	128	128	
231	AF CONTROL DATA	127	127	127	
232	AF CONTROL DATA	128	128	128	
233	AF CONTROL DATA	2	2	2	



ADRS	CONTENTS	M-CPU				NOTE
		MP 1	MP 2	MP 3		
		3.39	3.44	4.03		
234	AF CONTROL DATA	4	4	4		
235	AF CONTROL DATA	0	0	0		
236	AE LEVEL ADJUSTMENT DATA CH1	-	-	-		
237	AE LEVEL ADJUSTMENT DATA CH2	-	-	-		
238	AE LEVEL ADJUSTMENT DATA CH3	-	-	-		
239	AE LEVEL ADJUSTMENT DATA CH4	-	-	-		
240	AE LEVEL ADJUSTMENT DATA CH5	-	-	-		
241	AE LEVEL ADJUSTMENT DATA CH6	-	-	-		
242	AE LEVEL ADJUSTMENT DATA CH7	-	-	-		
243	AE LEVEL ADJUSTMENT DATA CH8	-	-	-		
244	AE ADJUSTMENT DATA	-	-	-		
245	AE ADJUSTMENT DATA	-	-	-		
246	PRE-LEVEL ADJ. DATA CH1	-	-	-		
247	PRE-LEVEL ADJ. DATA CH2	-	-	-		
248	PRE-LEVEL ADJ. DATA CH3	-	-	-		
249	PRE-LEVEL ADJ. DATA CH4	-	-	-		
250	PRE-LEVEL ADJ. DATA CH5	-	-	-		
251	TTL PRE-GAMMA ADJUSTMENT DATA	-	-	-		
252	TTL LEVEL ADJUSTMENT DATA CH1	-	-	-		
253	TTL LEVEL ADJUSTMENT DATA CH2	-	-	-		
254	TTL LEVEL ADJUSTMENT DATA CH3	-	-	-		
255	TTL LEVEL ADJUSTMENT DATA CH4	-	-	-		
256	TTL LEVEL ADJUSTMENT DATA CH5	-	-	-		
257	TTL GAMMA ADJUSTMENT DATA	-	-	-		
258	TTL CONTROL DATA	230	230	230		
259	CAMERA CONTROL DATA	125	125	125		
260	CAMERA CONTROL DATA	96	96	96		
261	CAMERA CONTROL DATA	150	150	150		
262	CAMERA CONTROL DATA	10	10	10		



ADRS	CONTENTS	M-CPU				NOTE
		MP 1	MP 2	MP 3		
		3.3 9	3.4 4	4.0 3		
2 6 3	CAMERA CONTROL DATA	1 2 4	1 2 4	1 2 4		
2 6 4	CAMERA CONTROL DATA	2 1 8	2 1 8	2 1 8		
2 6 5	CAMERA CONTROL DATA	8 3	8 3	8 3		
2 6 6	CAMERA CONTROL DATA	4	4	4		
2 6 7	BC ADJUSTMENT DATA	-	-	-		
1	1	1	1	1		
2 7 0	BC ADJUSTMENT DATA	-	-	-		
2 7 1	CAMERA CONTROL DATA	1 9 8	1 9 8	1 9 8		
2 7 2	CAMERA CONTROL DATA	1 7 6	1 7 6	1 7 6		
2 7 3	CAMERA CONTROL DATA	1 0	1 0	1 0		
2 7 4	CAMERA CONTROL DATA	8	8	8		
2 7 5	CAMERA CONTROL DATA	-	-	-		
2 7 6	CAMERA CONTROL DATA	7 2	7 2	7 2		
2 7 7	CAMERA CONTROL DATA	1 7	1 7	1 7		
2 7 8	CAMERA CONTROL DATA	3	3	3		
2 7 9	APERTURE CONTROL DATA	-	-	-		
2 8 0	APERTURE CONTROL DATA	8	8	1 7		
2 8 1	M 1/4000 ADJUSTMENT DATA	-	-	-		
2 8 2	CAMERA CONTROL DATA	5	5	5		
2 8 3	CAMERA CONTROL DATA	1 7	1 7	1 7		
2 8 4	CAMERA CONTROL DATA	7 5	7 5	7 5		
2 8 5	CAMERA CONTROL DATA	6 0	6 0	6 0		
2 8 6	CAMERA CONTROL DATA	0	0	0		
2 8 7	ERROR CODE	-	-	-		
2 8 8	CAMERA CONTROL DATA	0	0	0		
2 8 9	CAMERA CONTROL DATA	2 5 5	2 5 5	2 5 5		
2 9 0	CAMERA CONTROL DATA	0	0	0		
2 9 1	CAMERA CONTROL DATA	0	0	0		

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